Lieut.-Colonel E. W. GOODALL said that prodromal fever had been noticed after the subcutaneous injection of serum. Fever might occur without a rash. The proportion of rashes varied with the serum used. No doubt, if the patients who died during the latent period were excluded, 40 per cent. of the remainder would have had rashes. The severity of serum sickness was not nearly as bad as when serum was first introduced.

Dr. J. D. ROLLESTON thought that the severity of the rashes was determined by the size of the dose and varied indirectly to the severity of the attack.

Major C. R. Box drew attention to the absence of rashes when precipitated antitoxin was used. Numbers of men in the army had been injected with tetanus antitoxin and might get cerebro-spinal fever later. What was the likelihood of anaphylaxis occurring in such men? He thought that the percentage of rashes might be linked up with the amount of foreign protein given. Figures from two general hospitals showed that the rashes only amounted to 2 to 5 per cent. of the cases injected, and might be due to the small amount of protein administered as the unitage was high.

Lieut.-Colonel GOODALL said that the strength of unitage had gone up, but the volume to be injected had gone up also. Many soldiers had frequent injections of antitoxin, but the number who got anaphylaxis was very small.

Dr. R. A. O'BRIEN also spoke, and Surgeon-General ROLLESTON briefly replied.

Reviews.

CLINICAL TUBERCULOSIS.

THE world-wide campaign against the ravages of tuberculosis has now been in progress for many years. The results that have hitherto been obtained can be examined by the light of experience, and a comprehensive treatise on the whole subject, written by one who has had the fullest opportunities for observation and study, must be welcomed. Such a treatise, contained in two portly volumes, has recently been presented, under the title *Clinical Tuberculosis*,[1] by Dr. F. MARION POTTENGER, the Director of the Sanatorium in Southern California which bears his name.

A very large number of patients, suffering from tuberculosis in many forms and stages, have of necessity passed through his hands, and in his work he has had able assistance from highly qualified colleagues who have added to the value of the book by their own contributions upon special departments. With the feeling that in times past there has been too great a tendency to rely upon laboratory findings and pathological theories founded upon them, Dr. Pottenger has endeavoured to approach the subject from the clinical side, to study to understand the symptomatology, and to correlate it with pathological findings. His practice has brought him into contact with tuberculosis of the lungs more than with the disease as affecting other organs, but he emphasizes the fact all through his work that local disease in any part of the body must of necessity have some effect upon the function, if not the structure, of other parts and organs, and that these effects are part of the malady that has to be treated.

Although every aspect of a very wide subject comes in for review, the author disclaims any pretensions to the production of a general textbook. He has brought together a series of essays and monographs in which each subject is critically examined. This arrangement of necessity leads to a good deal of overlapping and repetition, but such repetition applies mainly to essential points, and serves to emphasize cardinal facts upon which special stress should be laid. Among these may be instanced the infection of lymphatic structures at early periods of attack. The actual point of entry of the bacillus into the human system in any individual case can never be determined. The first indications are almost always observed in lymphatic tissues. In young persons this is especially manifest, as in them the bacillus has a virgin soil for development, not yet protected in any way by previous infections. The detention of the bacillus in the lymphatic structure is immediately followed by the formation of protective substances, and the fact is well known to all who have had experience of tuberculosis as a life-long disease, that early glandular infection appears to exercise prophylactic effects, even in cases where it has advanced to suppuration. Hence Dr. Pottenger is averse to the removal of lymphatic glands or of tonsils when affected by tubercle, unless they are causing obstruction.

In reviewing so comprehensive a book as this, it is only possible to refer to a few of the main points. Amongst these we may instance the discussion on the relative frequency of bovine tuberculosis, which he considers to be negligible after the age of 10 and only present in young children in a comparatively small proportion. Clinically the two types are indistinguishable and the diagnosis must always be made in the laboratory. Infection by way of the tonsils or through the mucous lining of the intestines is first delayed in its passage through the lymphatic glands or channels. In such organs as the liver, the kidneys, or the spleen the secondary metastases, which may occur if the infection passes the glandular filter, are not at first indicated by symptoms, and in the lung such infection must have produced a good deal of local disturbance before any physical evidence of its presence can be obtained. In the meninges, on the other hand, the disease is very quickly indicated. The proclivity of the apex of the lung in young adults to tuberculosis is explained by the fact that during the years of growth the gradual change of shape in the thoracic cage leads to stagnation of circulation through the upper parts of the lungs. Hence the bacilli passing through them become arrested, whereas in children, where the circulation is much the same through all parts of the pulmonary area, there is no such tendency to apical disease. Diagnosis of present disease by all the usual methods is adequately described, but the value of the *x*-ray evidence is not estimated quite so highly as by many of its advocates in this country.

The effects produced by the tuberculous poison upon the nervous system are so various and complicated that no definite scheme of cause and effect can be formulated. The author is led to the conclusion that the disturbance of the normal balance between the vagus and the sympathetic is the most obvious phenomenon, and this in turn opens up an endless vista of speculation. The organic and mental results of such disturbance, and the formation of autogenous toxaemic substances and their effects, are dealt with at considerable length. Due regard is paid to Head's observations on the relation between local tenderness and visceral disease.

The second of the two large volumes is devoted to the subjects of treatment and of complications. In many respects Dr. Pottenger's views and consequent practice differ from those of many other clinicians, but he states very clearly the grounds upon which such difference is founded and fully recognizes that there may be several roads to success. To aid natural processes, rather than to attempt to neutralize the effects of the tuberculous poison by outside means, is the main idea that he inculcates. Hence he considers that tuberculin, in common with other remedies, should only be used with that object and not with the view of direct attack. Of climatic treatment, as such, he speaks with considerable reserve, and deprecates over-confidence in its powers.

Throughout the many chapters in which he describes the numerous aspects of his subject, Dr. Pottenger keeps an open mind and makes it clear that successful results are best to be obtained by careful and continuous study of the individual, coupled with experience of the disease as occurring in like cases. His own experience is recorded within the covers of a work that deserves cordial recognition, not only as a full and comprehensive account of the disease as it appears to the clinician, but as embodying the mature thoughts and opinions of an accomplished clinical observer.

[1] *Clinical Tuberculosis.* By Francis Marion Pottenger, A.M., M.D., LL.D., Medical Director Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California, etc. London: Henry Kimpton. 1917. (Med. 8vo; 2 vols.; pp. 707 and 713; illustrated. £3 3s. net.)

RADIOGRAPHY.

THE second edition of ROBERT KNOX's book on *Radiography and Radio-Therapeutics*[2] has followed in less than two years after the first. In reviewing the first edition we

[2] *Radiography and Radio-Therapeutics.* By Robert Knox, M.D. Second edition; first volume, Radiography. London: A. and C. Black, Ltd. 1917. (Sup. roy. 8vo. pp. xxv + 384; 490 illustrations. 30s. net.)

expressed the opinion that it was by far the best book on the subjects in the English language; we see no reason to alter this opinion. The present edition has been so much enlarged that the book is now in two volumes: the first —the one now under review—dealing with radiography; the second—which will appear later—with radio-therapeutics. The present first volume is now as large as the original book, some 150 pages having been added, with a number of new illustrations. The general construction has been adhered to, the first 130 pages dealing with the instrumentation of radiography and a full description of various types of tubes, including the Coolidge and hydrogen tubes. A short account of the installations necessary and suitable for military service has been added to this section. An interesting account is given of the apparatus for the production of single-impulse radiographs, and two very fine examples of the stomach and bowel after an opaque meal show the possibilities of this method of plate production.

The chapter on photographic technique is clear and concise and does not enter into unnecessary detail of what, after all, is a very simple process. Following this is a chapter on stereoscopic radiography, and then a comprehensive account of the localization of foreign bodies, in which all the principal useful methods are fully dealt with. This is a valuable addition to the book, as this subject was not treated of in full in the first edition. There is a short account of radiography as an aid to the surgeon and physician in war time, with special reference to gas gangrene. An important, and sometimes overlooked, part of radiography follows—namely, the radiography of normal bones and joints, the feature of this chapter being the description of the skull and accessory sinuses, with special reference to the technique. Very remarkable negative and positive pictures of the antero-posterior view of the living human skull are striking evidence of what is possible in this direction. Chapters on the injuries of bones and joints, diseases of bone, differential *x*-ray diagnosis in diseases of bones and joints, follow in sequence, and then very full accounts are given of the examination of the thorax and its contents, the examination of the alimentary system, and the radiography of the urinary tract.

The illustrations are a valuable feature of the whole book. They are all of superfine excellence and are well chosen to visualize the letterpress description. Side by side are reproduced the negative and the print from the negative, and the contrast between the two is distinctly educational from the point of view of the reading of radiographs. Although many of these reproductions are quite small, it is remarkable how the various points are brought out, and we congratulate the author on the care which has evidently been exercised in making the blocks and in printing from the same.

The general arrangement of the contents is admirable, and the simplicity of the writing renders it an easy matter to follow the descriptions of the author. When one considers the scope of radiography at the present time, and the enormous number of conditions in which it can render diagnostic aid, it is remarkable that so much concise and clear information can be given in one volume; it does not appear that a single point has been overlooked.

Whilst this volume should appeal to every one even remotely interested in radiography and its possibilities, it is especially adapted for the use of the student. It should be read not only by the student and qualified man who is seriously taking up the study of radiography from a professional point of view, but also by every medical student before he or she qualifies. Radiography has now become of great importance from a diagnostic point of view in both medicine and surgery, and a book of this kind emphasizes this is an unmistakable manner.

NOTES ON BOOKS.

THE four large volumes of Dr. H. M. HURD'S *Institutional Care of the Insane in the United States and Canada*,[8] a monumental work, give a detailed historical account of what has been done for the mentally afflicted in North America from the earliest days. The history of each of the many institutions and asylums is given, and photographs of the present buildings are in many cases added. Lists of the past officers are included, and there are many biographies, often with portraits, of eminent North American alienists. Dr. Hurd is to be congratulated upon the success with which he has carried out the collection and colligation of the numerous interesting records contained in these volumes. Naturally they will appeal most strongly to readers across the Atlantic; but in their record and analysis of success and failure in attacking a problem of great importance in all civilized communities—namely, the care of the insane—they should find many readers throughout the world.

[8] *The Institutional Care of the Insane in the United States and Canada.* By Henry M. Hurd, William F. Drewry, Richard Dewey, Charles W. Pilgrim, G. Alder Blumer, and T. J. W. Burgess. Edited by Henry M. Hurd. Baltimore, Md.: The Johns Hopkins Press. 1917. (Med. 8vo. Four volumes; illustrated.)

VOLUNTARY FOOD RATIONS FOR CHILDREN.

THE Food Ministry, when issuing the new voluntary rations three weeks ago (November 17th, p. 656), laid stress on the fact that children were not rationed. It has now considered it advisable to issue the following suggestions for average weekly rations for children. It recognizes that the needs of individual children differ greatly, and that some children may require a more liberal provision, while others may need less. It is strongly advised that boys and girls whose food is rationed should be weighed every fourteen days at the same period of the day before a meal, and a record kept of their weight without clothes; if the weights are stationary or decline after two consecutive weighings, the allowance of food should be increased.

Voluntary Rations for Children and Young People.

Ages.	Bread.	Other Cereals.	Meat.	Butter. Margarine, etc.	Sugar.
Boys and girls:	lb. oz.	oz.	lb. oz.	oz.	oz.
0–5	3 0	6	1 0	6	8
6–8	3 8	8	1 8	8	8
9–12	4 8	10	2 0	10	8
Boys:					
13–18	6 0	12	2 0	10	8
Girls:					
13–18	5 0	10	2 0	10	8

The explanations as to the meaning attached to the various terms, "bread," "other cereals," "meat," etc., are the same as those which apply to adult rations printed in the JOURNAL at the page mentioned.

The Food Controller is also issuing the following suggestions with regard to the quantities of other foods which should, on the average, be supplied weekly to boys and girls whose consumption of bread, cereals, meat, and sugar is rationed in accordance with the above table:

Ages.	Potatoes.	Other Vegetables.	Milk.	Cheese.	Eggs or Equivalent.	Fish.	Jam and Syrup.	Cocoa Equivalent.
Boys and girls:	lb.	lb. oz.	pts.	oz.		oz.	oz.	oz.
0– 5	3	0 8	2	—	2 only	—	12	—
6– 8	4	1 0	2	1	2 ,,	—	12	1
9–12	5	1 0	2	1	2 ,,	8	12	1
Boys:								
13–18	7	2 0	2	2	3 ,,	12	12	1
Girls:								
13–18	5	1 0	2	1	2 ,,	12	12	1

If any article of food should not be procurable, an equivalent in some other form should be supplied, and the following list of the quantities of different foods approximately equal in food value is given:

Milk	1 pint	Potatoes	1 lb.
Eggs	5 only	Other vegetables ...	2½ ,,
Fish	1¼ lb.	Jam	6 oz.
Cereals	¼ ,,	Cocoa	3 ,,
Meat	4½ oz.	Bread	5 ,,
Cheese...	3½ ,,		

We propose next week to publish a short study of the value of these rations with reference to the special conditions of nutrition in growing children.